

## NCC Water Quality Score Card 2007

NCC has 22 sites where water quality is sampled four times each year as part of the State of the Environment monitoring. At each of these sites a range of water quality parameters are sampled (Table 1). These water quality data are given a grade based on trigger levels shown in (Table 1), and these grades are weighted and combined to give an overall grade for each site.

Table 1 Classification system used to grade individual water quality parameters at each SoE site. The grades for each water quality parameter are then weighted and combined to derive an overall grade for each site.

Parameter (values in mg/L unless specified)		A – Excellent	B - Very Good	C - Moderate	D - Degraded	E - Very Degraded
Nutrients	Nitrate-N	< 0.08	< 0.12	< 0.295	< 0.444	Anything else
	Ammonia-N					
	DRP	< 0.005	< 0.008	< 0.026	< 0.050	Anything else
Physical	pH (pH units)	7.2 < pH < 9	7.2 ≤ pH ≤ 9	6.5 ≤ pH ≤ 9	6.5 ≤ pH ≤ 10	Anything else
	Temperature (°C)	< 18	< 20	< 22	< 25	Anything else
	DO (%)	99 ≤ DO ≤ 103	98 ≤ DO ≤ 105	> 90	> 80	Anything else
	DO (mg/L)					
	Spec. Conductivity (mS/cm)					
Clarity	Turbidity (NTU)	< 1	< 2	< 3	< 5	Anything else
	Black disc (m)	> 6	> 4	> 2.5	> 0.6	Anything else
	TSS					
E.coli	(cfu/100mL) Recreational MAC	< 10	< 130	< 260	< 550	≥ 550
Macroinvertebrates	MCI	> 120	> 100	> 80	> 60	Anything else
	SQMCI	> 6	> 5	> 4	> 3	Anything else
Periphyton	Periphyton score Filament > 20 cm, ≥ 30% cover	> 8	> 6	> 4	> 2	Anything else

N.B. All classifications are based on the median value over a given sampling period.

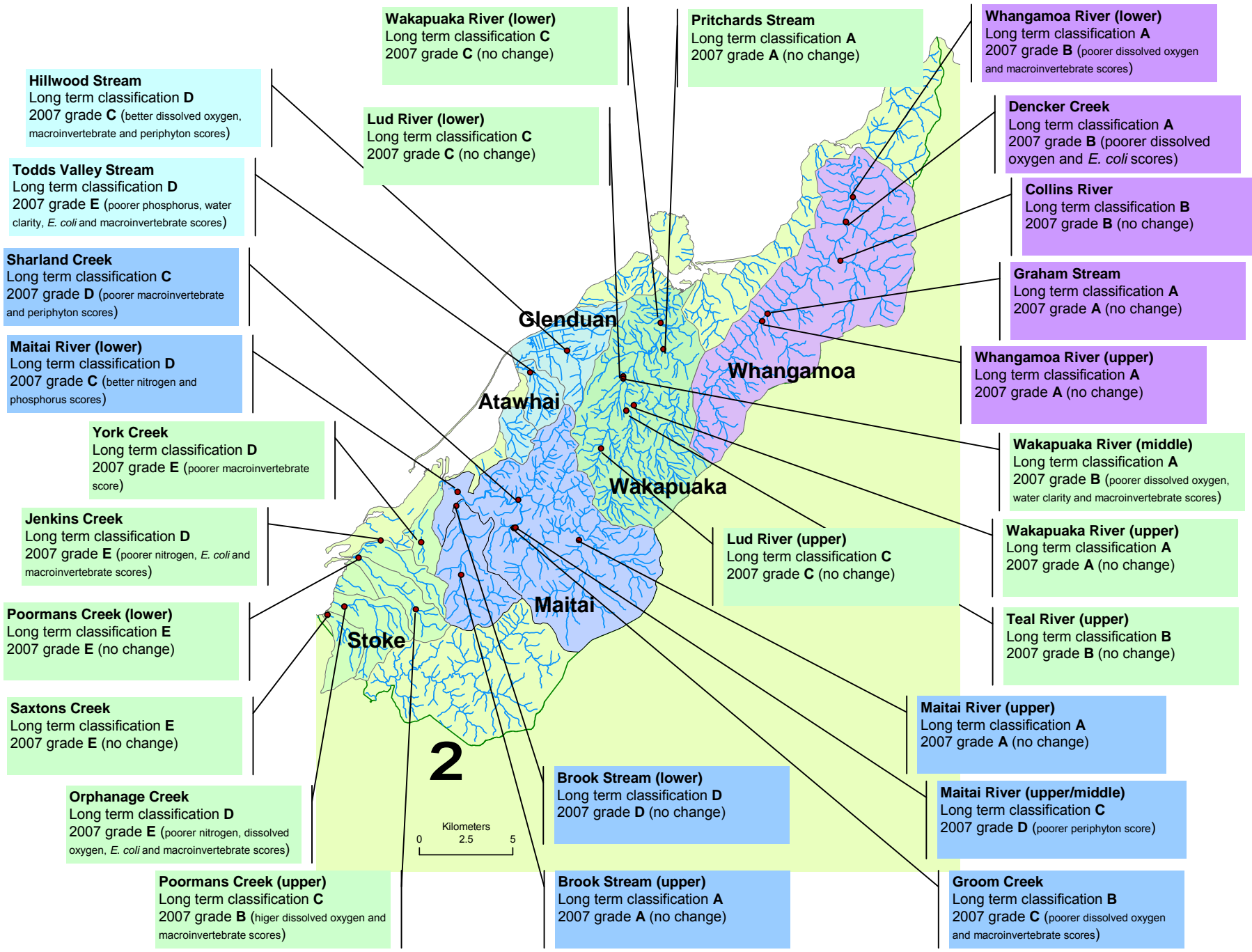
Greyed variables are not used in the classification system.

Classification is worked through from left to right across the table.

Grading for nitrogen is based on the sum of the medians for Nitrate and Ammonia N.

This grading system was applied to the combined SoE data collected between November 2000 and August 2006, also including sediment contaminant samples taken at some sites, to assign a long term classification to each site. The map overleaf shows the long term classification for each site and compares it with the grades calculated for the most recent year of SoE water quality monitoring. A brief comment is provided for each site to suggest what appears to have been responsible for any changes observed in the grade for a given site.

Some sites tend to vary up or down a grade from year to year. So a site being graded lower for a single year should not be seen as a cause for alarm. However, if a site consistent tracks lower than its long term classification for several years it is likely to indicate a lasting reduction in water quality at that site.



**Hillwood Stream**  
 Long term classification **D**  
 2007 grade **C** (better dissolved oxygen, macroinvertebrate and periphyton scores)

**Todds Valley Stream**  
 Long term classification **D**  
 2007 grade **E** (poorer phosphorus, water clarity, *E. coli* and macroinvertebrate scores)

**Sharland Creek**  
 Long term classification **C**  
 2007 grade **D** (poorer macroinvertebrate and periphyton scores)

**Maitai River (lower)**  
 Long term classification **D**  
 2007 grade **C** (better nitrogen and phosphorus scores)

**York Creek**  
 Long term classification **D**  
 2007 grade **E** (poorer macroinvertebrate score)

**Jenkins Creek**  
 Long term classification **D**  
 2007 grade **E** (poorer nitrogen, *E. coli* and macroinvertebrate scores)

**Poormans Creek (lower)**  
 Long term classification **E**  
 2007 grade **E** (no change)

**Saxtons Creek**  
 Long term classification **E**  
 2007 grade **E** (no change)

**Orphanage Creek**  
 Long term classification **D**  
 2007 grade **E** (poorer nitrogen, dissolved oxygen, *E. coli* and macroinvertebrate scores)

**Poormans Creek (upper)**  
 Long term classification **C**  
 2007 grade **B** (higher dissolved oxygen and macroinvertebrate scores)

**Wakapuaka River (lower)**  
 Long term classification **C**  
 2007 grade **C** (no change)

**Lud River (lower)**  
 Long term classification **C**  
 2007 grade **C** (no change)

**Pritchards Stream**  
 Long term classification **A**  
 2007 grade **A** (no change)

**Whangamoa River (lower)**  
 Long term classification **A**  
 2007 grade **B** (poorer dissolved oxygen and macroinvertebrate scores)

**Dencker Creek**  
 Long term classification **A**  
 2007 grade **B** (poorer dissolved oxygen and *E. coli* scores)

**Collins River**  
 Long term classification **B**  
 2007 grade **B** (no change)

**Graham Stream**  
 Long term classification **A**  
 2007 grade **A** (no change)

**Whangamoa River (upper)**  
 Long term classification **A**  
 2007 grade **A** (no change)

**Wakapuaka River (middle)**  
 Long term classification **A**  
 2007 grade **B** (poorer dissolved oxygen, water clarity and macroinvertebrate scores)

**Wakapuaka River (upper)**  
 Long term classification **A**  
 2007 grade **A** (no change)

**Lud River (upper)**  
 Long term classification **C**  
 2007 grade **C** (no change)

**Teal River (upper)**  
 Long term classification **B**  
 2007 grade **B** (no change)

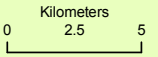
**Maitai River (upper)**  
 Long term classification **A**  
 2007 grade **A** (no change)

**Brook Stream (lower)**  
 Long term classification **D**  
 2007 grade **D** (no change)

**Maitai River (upper/middle)**  
 Long term classification **C**  
 2007 grade **D** (poorer periphyton score)

**Brook Stream (upper)**  
 Long term classification **A**  
 2007 grade **A** (no change)

**Groom Creek**  
 Long term classification **B**  
 2007 grade **C** (poorer dissolved oxygen and macroinvertebrate scores)



2